

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 93-163

REVISED SITE CLEANUP REQUIREMENTS FOR

UNISYS CORPORATION AND
SEAGATE TECHNOLOGY, INC.
(FORMERLY MAGNETIC PERIPHERALS, INC.), AND
JENNY BOSTON PROPERTIES

MAGNETIC PERIPHERALS, INC. (MPI) SITE
3333 SCOTT BOULEVARD FACILITY
SANTA CLARA, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that;

SITE DESCRIPTION

1. Groundwater pollution is present on the property at 3333 Scott Boulevard in the City of Santa Clara in Santa Clara County. Jenny Boston Properties, current owner of the property, and Unisys Corporation (formerly Sperry Corporation), a former occupant of the property, and Seagate Technology, Inc., owner of Magnetic Peripherals, Inc. (MPI), another former occupant, are all hereinafter referred to as the dischargers. For the purposes of this Order, Jenny Boston Properties will be responsible for compliance in the event that Unisys Corporation and Seagate Technology, Inc. fail to comply with the requirements of this Order.
2. The property, hereinafter called the Site, is relatively large, approximately 30 acres in extent, and contains a two-story concrete building complex, surrounded by paved parking lots and landscaping, in an area of light industrial and commercial development (Figure 1).
3. The Site was developed from agricultural land and occupied by Sperry Corporation (Sperry) from August 1978 to April 1983, at which time Magnetic Peripherals, Inc. (MPI), then a division of Control Data Corporation, occupied the Site and took over operations from Sperry. Subsequently Sperry became part of Unisys Corporation (UNISYS). Jenny Boston Properties acquired the property on August 4, 1988 from its predecessor, a partner in Jenny Boston Properties; the partner acquired the property from Sperry on October 25, 1983. The Site was used for the assembly of computer disk drives until 1986. It is not used at present, and was being maintained by MPI caretaker personnel until the lease expired and was not renewed in April 1993. The property owner reportedly plans to raze the building and redevelop the property for commercial use.
4. Features of the complex included: (1) a loading dock and chemical storage building (identified also as chemical or chem shed) located outside the west side of the building; (2) a tank farm area

(Mendocino Tank Farm) on the north side of the building at the northeast corner; (3) two underground diesel storage tanks and one above-ground propane tank on the west side of the building south of the chemical shed; and (4) interior areas of manufacturing and laboratory activities where chemicals were routinely used and industrial wastes were generated (Figure 2).

5. As reported to Board staff, the chemical storage shed area on the west side contained two 1,000-gallon above-ground freon tanks and 55-gallon barrel (drum) quantities of other cleaning solvents. Floor drains in the shed were connected to a 1,080-gallon underground spill containment tank located south of the storage shed. The freon tanks were connected to the chemical-use areas in the manufacturing building by underground pipes.
6. The Mendocino Tank Farm area included acid neutralization tanks, a liquid nitrogen tank, an 800-gallon underground waste tank, an acid pit, a caustic pit, and above-ground storage for small quantities of acids, caustics and solvents including acetone, alcohol, chlorinated hydrocarbons, phenols, toluene, and xylene. The underground waste tank was connected to the building by piping.

SITE HYDROGEOLOGY AND INVESTIGATIONS

7. As part of Santa Clara's Underground Tank Leak Detection Program, five monitoring wells were installed and a subsurface investigation was conducted in December 1983. The predominant chemicals detected in groundwater were trichloroethylene (TCE) up to 0.180 milligrams per liter (mg/l) and Freon-113 up to 8.0 mg/l in the vicinity of the chemical storage shed. In the vicinity of the tank farm, 1,1,1-trichloroethane (TCA) at 0.016 mg/l, TCE at 0.0017 mg/l, Freon-113 at 0.180 mg/l, chloroform at 0.001 mg/l, and methyl ethyl ketone at 0.040 mg/l were detected. Aliphatic hydrocarbons (0.009 mg/l) were detected in groundwater in the vicinity of the diesel storage tanks. Dissolved volatile organic compounds (VOCs) were said to generally extend to a depth of 20 feet below the surface on-site, and to a depth of 40 feet in the chemical shed/loading dock area.
8. Four additional monitoring wells were installed early in 1984. Water samples were collected from all nine wells and analyzed. VOCs were detected in the groundwater. TCE and Freon-113 were identified in the chemical storage shed area; 1,1,1-TCA, TCE, 1,1-dichloroethane (1,1-DCA), Freon-113, Freon-11, and trans-1,2-dichloroethylene (trans-1,2-DCE) were detected in the Mendocino Tank Farm area. In 1985, concentrations of tetrachloroethylene (PCE) up to 0.078 mg/l were also detected in on-site groundwater.
9. Underground piping was pressure-tested in January and February of 1984. A fluid loss was indicated in the drain line from the chemical shed but not in other lines. All underground tanks were subsequently excavated and removed in October 1985 and June 1986. The dischargers report that soil sampling was conducted at the time tanks were excavated. Limited soil sampling was also done in 1983, 1987 and 1989. Only very low concentrations of VOCs were detected.
10. The on-site near-surface alluvial sediments have been subdivided into units identified as silt and clay, or sand and gravel. Water-bearing sands and gravels were identified at depth intervals of 10 to 15 and 25 to 35 feet (labeled A and B zones, respectively) beneath the Site. The depth to groundwater ranged from 4 to 10 feet in early 1985. Normal groundwater flow is to the north-northeast, at a rate of about 0.3 foot per day (100 feet per year).

11. The dischargers performed a hydrogeologic assessment of the Site in 1985. The assessment consisted of an evaluation of existing data and the installation of six additional monitoring wells to complement the nine wells previously installed. The assessment included descriptions of Site geology, the groundwater flow regime and hydraulic characteristics, and water quality.
12. Water is not withdrawn from the shallow alluvium for any use other than VOC removal and monitoring at or in the vicinity of the Site. Deeper water-production wells were inventoried by the dischargers within a distance of about one mile downgradient of the Site; no drinking water wells were identified. Three potential well locations associated with previous farm buildings or residences were identified by the dischargers from historical aerial photographs. Two of these potential well locations are lateral to and 500 to 800 feet east from the on-site affected area. The third potential location is about 2500 feet north and downgradient from the MPI property north boundary (Figure 3). A well survey conducted by the dischargers in 1987 could not verify the existence of possible wells in these three areas.
13. A total of 21 wells had been installed on-site by 1989. One monitoring well was abandoned (and replaced with a new well) because silt accumulated in the bottom of the well. Two extraction wells became non-operational because pumping lowered the water level to a depth beyond the reach of these wells. Five wells were plugged and abandoned in 1990 because screened/slotted intervals were too long (they reached across two or more water-bearing intervals) and potentially could have resulted in cross-contamination and/or result in diluted dissolved VOC (in groundwater) samples. Two of these were replaced with new wells.
14. In December 1990, six new monitoring wells were installed: five were shallow (less than 25 feet) and one was deeper (35 feet). These wells were installed to determine the extent of dissolved 1,2-DCE being detected on-site. Subsequently, a plume of 1,2-DCE in shallow groundwater was interpreted to exist along the northern edge of the building, but a potential source of this VOC was not indicated. Current monitoring results show the plume still to be present but apparently not moving towards the downgradient site boundary. Existing wells are shown on Figure 4.
15. In 1992 the property owner made a limited subsurface investigation to determine if a VOC source existed beneath the building. The investigation revealed the presence of 1,2-DCE at concentrations up to 0.180 mg/l in shallow groundwater, but the owner concluded that a VOC source was not present. Additional extraction wells have not been installed to address the 1,2-DCE detected beneath the building, but the one operating extraction well (W19) is removing groundwater and VOCs, including 1,2-DCE, from the vicinity of the building.
16. The maximum concentrations of VOCs detected on-site have been: TCE at 2.0 mg/l in well W3 in 1985; Freon-113 at 9.23 mg/l in well W19 in 1986; vinyl chloride at 0.0025 mg/l in well W19 in 1989; and 1,2-DCE at 0.240 mg/l in well W25 in 1993. All these wells are completed in the shallow aquifer.
17. Three shallow-groundwater pollutant plumes are currently identified by the dischargers. A narrow TCE plume exists on the west side of the building in the vicinity of the chem shed and loading dock (Figure 5), and extends northeastward to the north edge of the building and perhaps beyond. TCE has been detected at concentrations below the 0.005 mg/l State and Federal maximum contaminant level (MCL) at the north property boundary. Concentrations up to 0.040 mg/l in the chemical storage area have been reported in 1992, and 0.021 mg/l in 1993.

18. A 1,2-DCE plume is identified along the north side of the building and extending beneath the building. Concentrations in the 0.100-0.300 mg/l range have been reported. 1,2-DCE has been detected at very low concentrations (below the 0.006 mg/l [cis] and 0.010 mg/l [trans] California MCLs) in well W1 at the upgradient property boundary (Figure 5).
19. A shallow-groundwater low-level Freon plume is also present (Figure 6), extending from the chem shed area onto the nearest downgradient off-site property. Freon-113 has migrated off-site and has been detected in monitoring wells at concentrations below the California MCL of 1.2 mg/l on the adjacent property directly north and downgradient of the Site. In July of 1987 a soil-gas survey indicated a plume of Freon-113 extending downgradient in a north-northeast direction about 1500 feet from the Site (Figure 3). Currently, a narrow Freon-11 plume approximates the TCE plume; a broader Freon-113 plume is much more extensive. The concentrations of Freon-11 and Freon-113 are below the California drinking water MCLs of 0.150 and 1.2 mg/l, respectively.
20. Low concentrations of TCE have been detected very locally in the deeper zone, and a deeper-zone Freon plume has been identified, but appear to be confined to the vicinity of chem shed/loading dock area on the west side of the building (Figure 7).
21. In October 1991, TCE was detected at a concentration of 0.0062 mg/l in groundwater on the property immediately downgradient of the Site. The detected concentration of TCE may have been anomalous because TCE has not been detected since this time. In April 1992, Freon-113 at 0.022 mg/l in groundwater from a shallow well and 0.0076 mg/l from a deeper well, both on the downgradient property, were reported by the downgradient property owner. The most recent sampling event (April 1993) detected 0.260 mg/l of Freon-113 in shallow well W44A and 0.0018 mg/l Freon-113 in shallow well W45A, shown on Figure 8.

RISK ASSESSMENT

22. The dischargers submitted a technical report dated August 10, 1990 demonstrating that one potential exposure pathway for chemicals remaining at this Site is through groundwater, by ingestion or other domestic use. The technical report on risk at the Site calculates a human carcinogenic health risk on the order of 10^{-4} and a non-carcinogenic health hazard index of less than one, under a scenario of on-site residential exposure, potable water ingestion and vapor inhalation; and residential exposure, irrigation water, dermal contact, using VOC concentrations detected at the time the risk assessment was made.
23. The Board believes a second exposure pathway, by soil and/or groundwater vapor, could exist if excavation of shallow soil occurred and was not properly identified, monitored, and controlled if necessary. The report did not include a calculation for estimated risk due to the escape of soil and/or groundwater vapor if excavation of shallow soil occurred, but the Board estimates this risk to be minimal due to the low concentrations of VOCs remaining. The total risk is within the U.S. EPA recommended risk management levels for Site cleanup.
24. The remaining risk(s) can be managed by implementing deed restrictions, a long-term monitoring program, and a contingency plan if monitoring indicates that additional remediation is necessary.

REGULATORY HISTORY

25. In August 1986 a groundwater extraction and treatment system was installed. The dischargers originally installed seven on-site extraction wells, five in the 10 to 15-foot interval and two in the 25 to 35-foot interval, as an interim measure, to remove polluted groundwater for treatment by packed tower air-stripping and a carbon adsorption unit prior to discharge to a storm sewer system tributary to Calabazas Creek and South San Francisco Bay. The discharge is authorized by NPDES Permit No. CA0029025, adopted (and renewed) by the Board on November 20, 1991, in Order No. 91-159. The carbon vessel was previously removed from the treatment train because it was no longer needed.
26. At one time, influent from three extraction-well clusters was piped to the treatment unit outside the northwest corner of the building, where each waste stream was discharged individually into a large open-top tank and mixed with acid for scale control before passing to the air stripper. Presently influent originates from only one extraction well (W19), on the north side of the building.
27. The treatment system has operated almost continuously from August 18, 1986. The effluent has contained minor amounts of Freon-113, TCE, and trans-1,2-DCE. The instantaneous total concentration of VOCs at any time measured in the effluent has been less than the permit limit daily maximum. Approximately 75,000 gallons per day (gpd) of polluted groundwater were being extracted, treated and discharged prior to 1991; currently, with only one extraction well in operation, about 10,000-15,000 gpd are being extracted. A total of about 84 million gallons of groundwater have been extracted, and about 152 pounds of VOCs have been removed, since August 1986.
28. The dischargers attempted to comply with Board Resolution No. 88-160 (reclamation or reuse of extracted groundwater) and reported to the Board that: the Site is dormant and there is no potential on-site use for reclaimed water; the POTWs in the area have excess water and will not accept reclaimed water; it is not practical to reinject reclaimed water. However, this Site is participating in the Santa Clara Valley Water District (SCVWD) program to reuse groundwater from cleanup extractions, and the Site has been listed by the SCVWD as a potential source of reclaimed water.

MAXIMUM CONTAMINANT LEVELS

29. In 1989 the Board adopted Site Cleanup Requirements (SCR) Order No. 89-178 for this Site. The SCR Order specified that final cleanup levels for polluted groundwater shall be background water quality if feasible, but shall not be greater than the California (State) DHS drinking water Action Level (AL) or Maximum Contaminant Level (MCL), whichever is more stringent. An AL does not apply if an MCL has been adopted for the chemical pollutant.
30. The Federal EPA similarly has adopted MCLs for pollutants, and the State and Federal MCLs are not always identical. The Federal EPA has also adopted Maximum Contaminant Level Goals (MCLGs) for certain chemicals, which may be lower than the Federal MCLs. The current Federal and State MCLs/MCLGs for VOCs of interest, and the appropriate MCL for this Site, are tabulated below, in Table 1.

Table 1: MCLs for VOCs of Interest (mg/l)			
Chemical	Federal MCL/MCLG	State MCL	Appropriate MCL
TCE	0.005/0.0	0.005	0.005
trans-1,2-DCE	0.100/0.100	0.010	0.010
cis-1,2-DCE	0.070/0.070	0.006	0.006
Freon-113	--	1.2	1.2
Freon-11	--	0.150	0.150
Vinyl chloride	0.002/0.0	0.0005	0.0005
1,1-DCA	--	0.005	0.005
PCE	0.005/0.0	0.005	0.005
1,1,1-TCA	0.200/0.200	0.200	0.200

COMPUTER SIMULATIONS

31. In 1990 the dischargers made computer simulations, using groundwater and chemical transport modeling, and concluded that after all extraction wells are shut down, groundwater with VOCs will eventually migrate to and beyond the Site's northern boundary. The simulations show TCE at 0.001 mg/l reaching the boundary 82 months after pumping ceases, and as much as 0.008 mg/l crossing the boundary three month later; and 1,2-DCE at 0.005 mg/l reaching the boundary 17 months after pumping cease and from 0.005 to between 0.010 and 0.050 mg/l crossing the boundary three months later. The simulations assume, for modeling purposes, the existence of a continuous source(s) of VOCs. These simulations incorporated concentrations of 1,2-DCE lower than those detected in 1992. If higher concentrations would have been used, the effects of VOC migration may have been more pronounced.

MASS BALANCE CALCULATIONS

32. More recently the dischargers made VOC mass balance calculations and determined that about 11 to 12 pounds of significant VOCs (mostly 1,2-DCE and a small amount of TCE) remain in the aquifer, and estimated that this mass of VOCs will be attenuated on-site through dispersion and sorption onto soil before dissolved VOCs greater than the appropriate MCLs would reach the Site's downgradient property boundary.
33. The Board believes a rigorous monitoring program should be adopted for the first two years after the pumps are turned off, to verify the above findings and as a means of ascertaining if a threat of off-site VOC migration continues to exist.

FINAL REMEDIATION PLAN

34. The dischargers (UNISYS and Seagate) submitted reports in 1993 providing a summary of costs associated with three groundwater remediation alternatives:
- a. Alternative No. 1: discontinue pumping and monitor semi-annually with annual reporting. Cleanup goals may be achieved in 10 years, or perhaps not until 20 years. Estimated costs are \$270,000 for ten years, and \$400,000 for 20 years.
 - b. Alternative No. 2: increase pumping to reduce the 1,2-DCE maximum concentration to no more than 0.060 mg/l in the vicinity of the building, which will require the installation of 2 or 3 additional extraction wells, and 6 years of pumping with 14 additional years of groundwater monitoring. The estimated cost is \$920,000.
 - c. Alternative No. 3: pump to reach MCLs everywhere - assuming that MCLs can be achieved in 20 years, for purposes of cost estimation (but also acknowledging that MCLs may never be reached). The estimated cost is \$1,700,000.
35. The dischargers have also supplied technical reports that indicate that MCLs may never be achieved and VOC concentrations will stabilize at approximately 0.026 mg/l TCE and 0.038 mg/l 1,2-DCE in the source area even with continued pumping for at least 10 years. Their proposed final remediation plan consists of:
- a. Termination of groundwater extraction pumping and removal of the groundwater treatment system.
 - b. Execution of a deed notice and deed restrictions for the property. (A draft deed notice has already been submitted for review and comment.)
 - c. Implementation of a quarterly sampling schedule with quarterly reporting to the Board for two years.
 - d. Implementation of contingency procedures if certain criteria are exceeded.
36. The Board has over 10 years of experience in the cleanup of polluted sites such as the MPI Site. In late 1992 with the consideration of Basin Plan groundwater amendments, the Board found that there are limits of existing technology which recent research, much of which is being confirmed at sites within the Region, demonstrates that using pump and treat technology removes and controls pollutant mass migration. However, pump and treat technology is not adequate technology, in most situations, to meet low-concentration groundwater objectives because the costs and time-frames may be prohibitive and ineffective.

The Board establishes the overall cleanup level for a waterbody based upon the most sensitive beneficial use identified. In all cases, the Board first considers high quality or naturally occurring "background" concentration objectives as the cleanup levels for polluted groundwater with a beneficial use of municipal and domestic supply, such as at this Site. If background concentrations cannot be achieved, cleanup levels are normally set no higher than:

- Maximum Contaminant Levels (MCLs), or where MCLs have not been adopted, other valid technical data supporting maintenance of the beneficial use (i.e., adopted Secondary Maximum Contaminant Levels, etc.); or,
- A more stringent level (i.e., below MCLs) based upon a Site specific risk assessment; or,
- At a level lower than MCLs that is technically and economically feasible.

Groundwater cleanup levels are approved on a case-by-case basis by the Board. Proposed final cleanup levels are based on a discharger-developed feasibility study of cleanup alternatives that compares effectiveness, cost, time to achieve cleanup standards, and a risk assessment to determine impacts on beneficial uses, human health and the environment. Cleanup levels must also take into account the mobility, toxicity, and volume of pollutants. Feasibility studies of cleanup alternatives may include the guidance provided by Subpart E of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300); Section 25356.1(c) of the California Health and Safety Code; U.S. EPA's Comprehensive Environmental Response, Compensation, and Liability Act; the State Water Board's Resolutions Nos. 68-16 and 92-49; and the Regional Water Board's Resolution No. 88-160.

As a result of the Board's findings regarding limits of existing technology, the Board has indicated it may modify points of compliance and/or established ground water cleanup standards under certain conditions:

- The groundwater is in low-yielding, fine-grained sediments (silts and clays) and the discharger has demonstrated that no significant pollutant migration will occur to underlying or adjacent aquifers; *and*
- Adequate source removal and/or isolation is undertaken to limit future migration of chemicals to groundwater; *and*
- Alternative or best available technologies are inappropriate or not cost-effective; *and*
- An acceptable plan is submitted for containing and managing the remaining risks posed by residual groundwater pollution. This plan could include institutional controls (deed restrictions; site operation, maintenance, health and safety plans; utility workers notice, etc.) and a commitment to mitigating measures such as participation in a regional groundwater monitoring or protection program.

The Board has also indicated it may consider modifying established groundwater cleanup standards based on documentation of the following:

- An aggressive cleanup program has been fully implemented and operated for a period of time which is adequate to understand both the hydrogeology of the Site and pollutant dynamics; *and*
- Groundwater pollutant concentrations have reached an asymptotic level using appropriate technology; *and*

- Best available technologies are inappropriate or not cost-effective to achieve further significant decreases in pollutant concentrations and/or mass; *and*
 - An acceptable plan is submitted for containing and managing the remaining risks posed by residual groundwater pollution. This plan could include institutional controls (deed restrictions; Site operation, maintenance, health and safety plans; utility workers notice, etc.) and a commitment to mitigating measures such as participation in a regional groundwater monitoring or protection program.
37. The dischargers' plan proposes on-site groundwater cleanup levels higher than California MCLs and utilizes an alternate-points-of-compliance concept described above (i.e., meeting low mg/l [ppb] compliance standards at specific locations for VOCs on-site to protect beneficial uses but still allow for limited, controlled areas of non-compliance). Based upon the information submitted by the dischargers, the compliance criteria outlined above, and Board analysis of the Site and conditions and the record before the Board, the Board finds that the application of Alternate Points of Compliance is appropriate for this Site.
38. The Board has reviewed all available information and has concluded that:
- a. Groundwater extraction is no longer efficiently removing VOCs from the groundwater at this Site.
 - b. The overall efficiency of VOC removal probably can be improved, but not enough to assure that MCLs or better for all VOCs can be achieved throughout the Site in a timely and cost-effective manner.
 - c. Concentrations of some VOCs in groundwater on-site may remain above MCLs in the vicinity of the chem shed/loading dock and existing building for years to come.
 - d. The calculated health risk is within acceptable risk management limits for residential development and therefore does not indicate that groundwater cleanup levels less than MCLs are necessary in order to protect public health and the environment; provided that on-site risk management plans are implemented to assure groundwater is not used for domestic purposes and adequate measures are taken to protect workers if excavation is proposed.
 - e. The dischargers should be able to contain the pollutant plume on-site and not allow off-site migration of VOCs above appropriate MCLs in groundwater.
39. The Board agrees with the concept of the dischargers' proposed remediation plan but does not agree completely with all elements of the proposal. The Board accepts the dischargers' proposal with certain changes and additions, detailed as follows:
- a. Quarterly monitoring and reporting will be required for two years after this Order is adopted with reduced frequency thereafter (if warranted), rather than semi-annual monitoring and annual reporting immediately. Eliminating the current extraction scheme requires more frequent monitoring to demonstrate that the proposed plan will meet requirements. The dischargers may request and the Executive Officer may approve

reductions of monitoring and reporting sooner than two years with submittal of satisfactory evidence of a stable pollution containment system.

- b. Requires on-site testing for vinyl chloride in addition to TCE and 1,2-DCE. Vinyl chloride has previously been detected. If vinyl chloride is confirmed present, it may change cleanup requirements, by requiring adequate evaluation of the potential threat to human health and the environment and appropriate action to mitigate any potential threat.
 - c. Requires the use of alternate points of compliance well within the Site to incorporate a smaller area of non-attainment than that originally proposed by the dischargers. This proposed change appears attainable as well as providing for some uncertainties to assure minimal impacts to off-site, downgradient properties' beneficial uses.
 - d. Requires a contingency plan that implements corrective action if certain criteria are confirmed as exceeded at any one compliance point. The contingency plan is considered to be a self-regulating mechanism to assure that compliance with the Order is met at all times.
 - e. Requires that groundwater polluted with VOCs in concentrations at or above adopted MCLs be completely contained onsite to assure maintenance of beneficial uses off-site.
 - f. Requires that the NPDES permit for this Site, or a substitute acceptable to the Executive Officer be maintained as part of an approved contingency plan.
 - g. Provides for management of the remaining risk by requiring the maintenance of a viable contingency plan, implementation of acceptable deed restrictions, and on-site containment of polluted groundwater.
40. Groundwater extraction and treatment, as part of a final remediation program, may be terminated upon adoption of this Order and written notification from the Executive Officer that an acceptable contingency plan and acceptable deed restrictions have been submitted, and not reinstated excepting as required herein and/or by the contingency plan.

BASIN PLAN

41. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 16, 1986 and amendments thereafter. The Basin Plan contains water quality objectives for Calabazas Creek and South San Francisco Bay and contiguous surface waters and groundwater.
42. The existing and potential beneficial uses of the groundwater underlying and adjacent to the property include:
- a. Industrial process water supply
 - b. Industrial service supply
 - c. Municipal and domestic supply
 - d. Agricultural supply

43. The existing and potential beneficial uses of the surface water of Calabazas Creek include:
- a. Agricultural supply
 - b. Groundwater recharge
 - c. Navigation
 - d. Contact and non-contact water recreation
 - e. Warm and cold fresh water habitat
 - f. Wildlife habitat

CEQA

44. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

NOTICE

45. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Revised Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and opportunity to submit their written views and recommendations.

46. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.
2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. UNISYS and Seagate shall conduct further reporting, site investigation and monitoring activities as needed and as described in this Order. Results of such monitoring activities shall be submitted to the Board. Should monitoring results show evidence of VOC plume migration, additional plume characterization may be required. The dischargers shall

submit to the Board acceptable monitoring program reports containing results of work performed according to a program prescribed by the Board or the Board's Executive Officer.

FINAL CLEANUP LEVELS

3. Final cleanup levels for polluted groundwater sampled from guard wells as defined in the Self-Monitoring Program (SMP) and as may be designated by the Executive Officer (i.e., wells approximately midway between the building and the downgradient property boundary) shall be ten times the appropriate drinking water MCLs (10 X MCL) for TCE, both isomers of 1,2-DCE and vinyl chloride, and the appropriate MCLs for all other identified VOCs, as shown in Table 2.
4. Final cleanup levels for polluted groundwater sampled from the dischargers' property boundary wells as defined in the SMP and as may be designated by the Executive Officer shall be the appropriate MCLs, as shown in Table 2.

Table 2: Final Cleanup Levels (mg/l)			
Chemical	Guard Well	Boundary Well	Appropriate MCL
TCE	0.050	0.005	0.005
trans-1,2-DCE	0.100	0.010	0.010
cis-1,2-DCE	0.060	0.006	0.006
Freon-113	1.2	1.2	1.2
Freon-11	0.150	0.150	0.150
Vinyl chloride	0.005	0.0005	0.0005
1,1-DCA	0.005	0.005	0.005
PCE	0.005	0.005	0.005
1,1,1-TCA	0.200	0.200	0.200

CONTINGENCY PLAN

5. The contingency plan for groundwater remediation shall be implemented whenever:
 - a. The confirmed concentration of any chemical of Table 2 in any downgradient on-site property well (as defined in the SMP), equals or exceeds the appropriate MCL; or,

- b. The trend of the concentration of TCE, or 1,2-DCE (either isomer), or vinyl chloride in any downgradient on-site property well (as defined in the SMP), exhibits a rate of increase which indicates that the appropriate MCL will be reached or exceeded before the next normally scheduled sampling event; or,
 - c. The confirmed concentration of TCE, or 1,2-DCE (either isomer), or vinyl chloride equals or exceeds ten times the appropriate MCL in any guard well (as defined in the SMP).
- 6. No later than two years after the adoption of this Order, or at such time as routine analyses of groundwater samples from any guard well indicate that the concentration of TCE or 1,2-DCE (either isomer) or vinyl chloride is equal to or greater than the appropriate MCL but less than ten times the appropriate MCL, whichever event comes first, the dischargers shall begin a study which complies with all the requirements of Provision 1.c. (Task 4) of this Order, and shall complete the study and submit the report required by Task 4 within 60 days.
 - 7. If and when the existing on-site building is razed, the dischargers shall conduct a geotechnical investigation to further delineate the extent of 1,2-DCE pollution in soil and groundwater in compliance with all requirements of Provision 1.d. (Task 5) of this Order. If conditions more adverse than those presently known are revealed by the investigation, the dischargers shall implement a plan of corrective action acceptable to the Executive Officer.

C. PROVISIONS

- 1. The dischargers shall comply with all Prohibitions and Specifications of this Order, in accordance with the following time schedule and tasks:

TASKS

a. DEED NOTICE

Task 1: DEED NOTICE. Submit a technical report acceptable to the Executive Officer which consists of a deed notice (deed restrictions) for the property at 3333 Scott Boulevard.

COMPLETION DATE: No later than March 1, 1994

Task 2: IMPLEMENT DEED NOTICE. Submit a technical report acceptable to the Executive Officer which documents that the deed notice has been filed with the proper County Office and is in effect.

COMPLETION DATE: No later than May 1, 1994

b. CONTINGENCY PLAN

Task 3: CONTINGENCY PLAN. Submit a technical report acceptable to the Executive Officer which describes a contingency plan to be implemented if necessary to prevent violation of the requirements of this Order.

COMPLETION DATE: No later than February 1, 1994

c. POLLUTION MIGRATION STUDY

Task 4: POLLUTION MIGRATION STUDY. Submit a technical report acceptable to the Executive Officer which confirms, by application of accepted scientific principles and analysis, the maximum concentration each of TCE, 1,2-DCE (either isomer) and vinyl chloride measured at any guard well which can be tolerated that will not indicate a threat of any of these VOC pollutants migrating off-site at concentrations equal to or above appropriate MCLs. This study shall include but not be limited to:

- 1) An evaluation of the performance of the monitoring network, the need to investigate preferential pathways for groundwater and pollutant migration, and the need to and benefits of installing additional monitoring wells; and,
- 2) A determination that a threat of off-site migration of polluted groundwater (one or more dissolved VOC pollutants at concentrations equal to or exceeding MCLs) does or does not exist; and,
- 3) A recommendation for action to address any potential threat of off-site pollution migration, or to augment on-site surveillance activities, with an implementation schedule.

COMPLETION DATE: No later than 60 days after commencing the study

d. INVESTIGATION OF EXTENT OF 1,2-DCE POLLUTION

Task 5: INVESTIGATION OF EXTENT OF 1,2-DCE POLLUTION. Submit a technical report, acceptable to the Executive Officer, that fully describes the extent of 1,2-DCE pollution in soil and groundwater underneath and adjacent to the existing on-site building after the building has been removed. Special consideration shall be given to the area beneath chemical lines and the northeastern portion of the building. As may be required, this report shall include a plan and time schedule for corrective action and shall evaluate any potential threat to potable water supplies, in a manner acceptable to the Executive Officer.

COMPLETION DATE: No later than 90 days after ending the geotechnical investigation

2. If the dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the dischargers shall promptly notify the Executive Officer. In the event of such delays, the Board may consider modification of the task completion dates established in this Order.
3. The dischargers shall submit quarterly technical reports commencing with the October through December 1993 quarterly report due February 15, 1994. The quarterly technical report shall include, but need not be limited to, all information required to be submitted by the Self-Monitoring Program on a quarterly basis for this Site. This requirement may be deleted or modified by the Executive Officer in two years or sooner upon request by the dischargers and submittal of information to demonstrate that a reduction is appropriate.
4. On an annual basis, technical reports on the progress of compliance with all requirements of this Order shall be submitted, commencing with the report for 1993, due February 15, 1994. The annual report may be combined with other technical report(s) which are due to be submitted on February 15, 1994. The progress reports shall include, but need not be limited to: information required to be submitted by the Self-Monitoring Program on an annual basis; updated water table/piezometric surface contour maps, pollutant concentration contour maps for all affected water-bearing zones, and base map(s) showing locations of all properly identified monitoring and extraction wells and identifying adjacent facilities and structures; and an evaluation of the effectiveness of the cleanup actions/systems and the feasibility of attaining groundwater and soil cleanup goals.
5. All hydrogeological plans, specifications, reports and documents shall be signed by or stamped with the seal of a registered geologist, registered civil engineer, or certified engineering geologist.
6. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.
7. The dischargers shall maintain in good working order, and operate as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.
8. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order shall be provided to the following agencies:
 - a. Santa Clara Valley Water District
 - b. Santa Clara County Health Department
 - c. City of Santa Clara
 - d. State Department of Health Services/DTSC

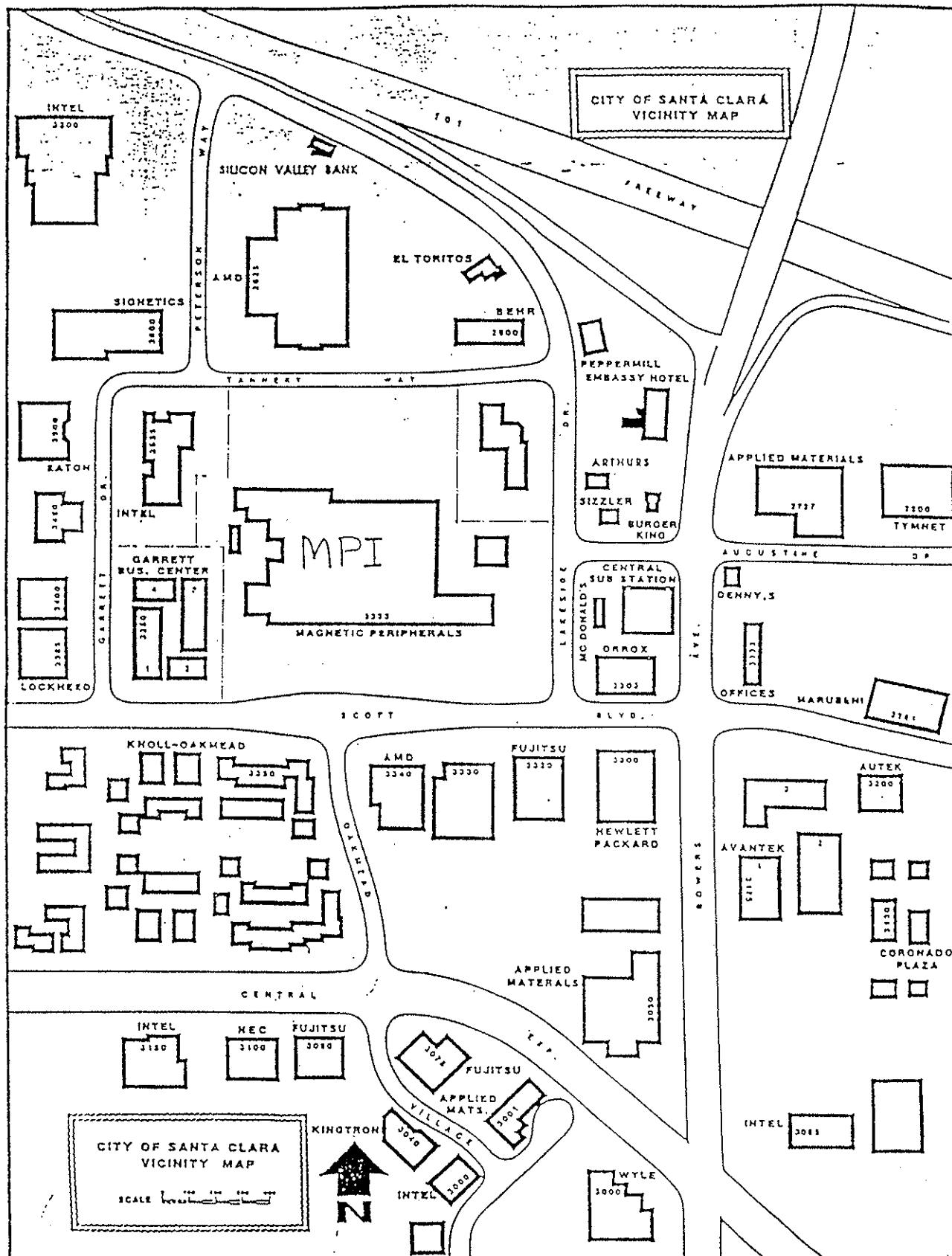
The Executive Officer may require additional copies be provided to the U.S. Environmental Protection Agency, Region IX, and to a local repository for public use.

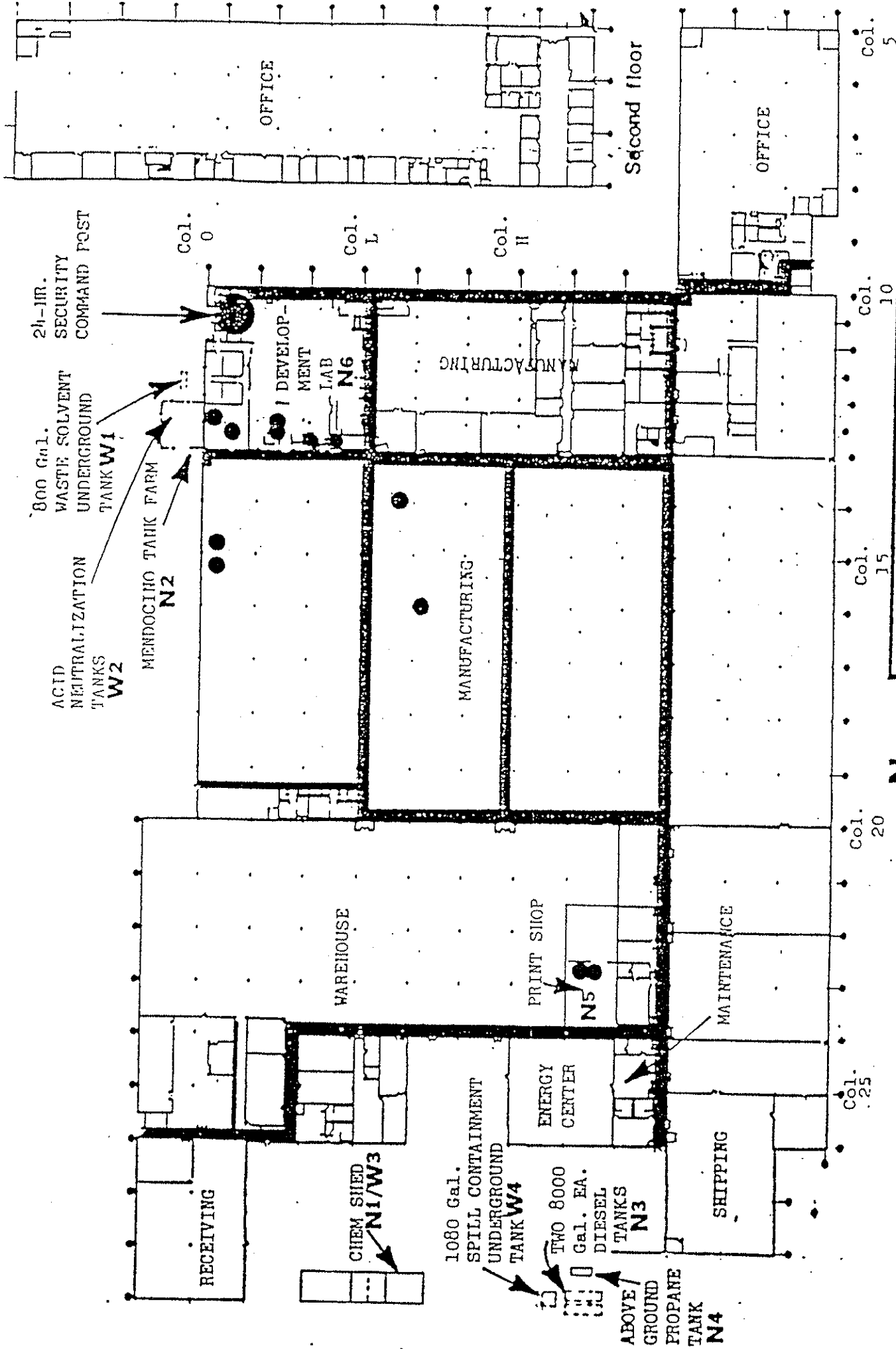
9. The dischargers shall permit the Board or its authorized representative, in accordance with Section 13267 (c) of the California Water Code:
 - a. Entry upon dischargers' premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
10. The dischargers shall file a report on any changes in site occupancy, ownership and/or property use including redevelopment associated with the facility described in this Order, within 15 days of each occurrence. If redevelopment is proposed, notice to the Board shall be made when a final plan is adopted or accepted by the property owners.
11. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the dischargers shall report such a discharge to this Board, at (510) 286-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of the waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons notified.
12. Within sixty (60) days of the Executive Officer's determination and actual written notice to Jenny Boston Properties that UNISYS and Seagate have failed to comply with the Provisions of this Order, Jenny Boston Properties, as landowner, shall comply with this Order.
13. Pursuant to California Water Code Section 13304 (c), the dischargers are hereby notified that the Board is entitled to and may seek reimbursement for all reasonable staff oversight costs incurred related to cleanup of wastes at the 3333 Scott Boulevard Site in Santa Clara, abating the effects thereof, or taking other remedial action.
14. Board Order No. 89-178 is hereby rescinded with the adoption of this Order.
15. The Board will review this Order periodically and may revise the requirements when necessary.

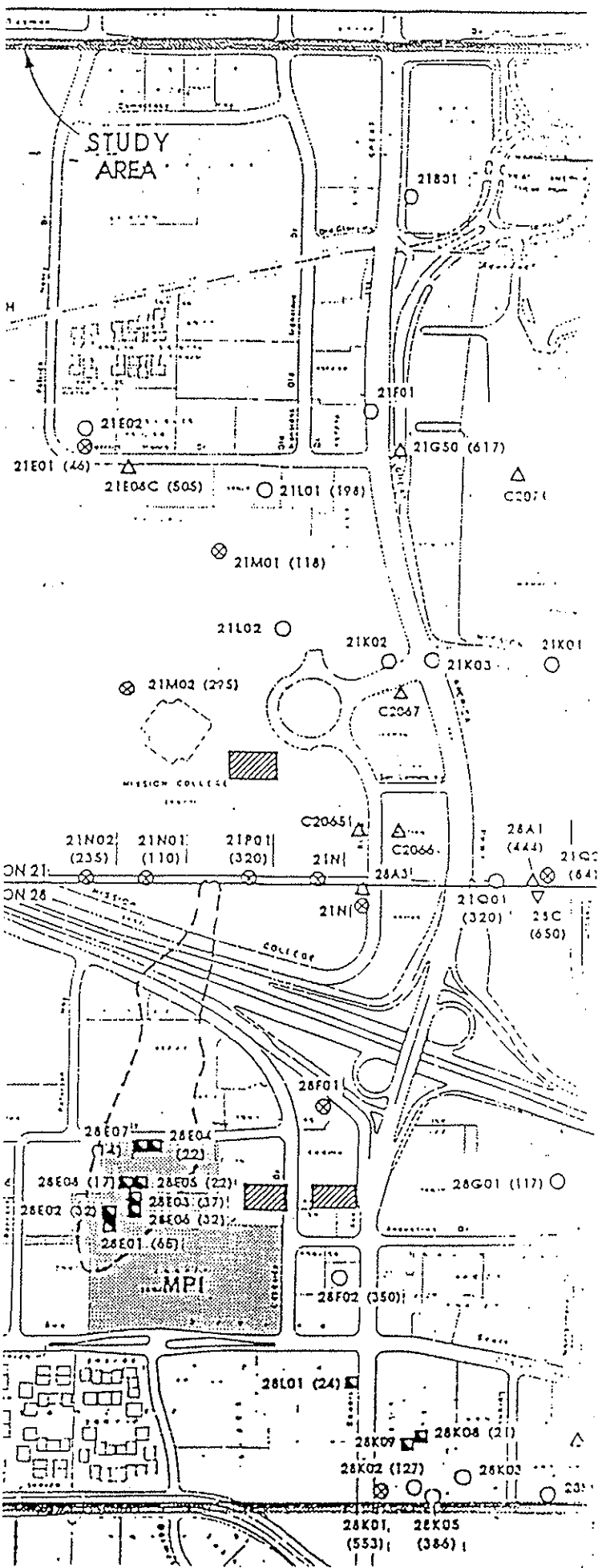
I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 15, 1993.

A handwritten signature in dark ink, appearing to read 'S. Ritchie', is written over a horizontal line.

Steven R. Ritchie
Executive Officer







EXPLANATION

- ⊗ Well sealed under Santa Clara Valley Water District Permit
- Abandoned well
- Active well exclusive of ground-water monitoring on extraction wells
- ▽ Test boring, status unknown
- △ Vicinity of well, status unknown
- Extraction well
- ▣ Monitoring well
- 20G13 Equivalent to well number 6S1W20G13 (612) (well depth in feet)
- W19 Approximate location of well from: Weiss Associates, 1986. Possible well locations selected parts of Santa Clara Valley, California.
- 5-E-47 Approximate location of well from: Hyatt, E., 1933. Santa Clara Investigation: Division of Water Resources Bull No. 42.
- C1874 Approximate location of well from: Clarke, W.O. 1924. Groundwater in Santa Clara Valley California: USGS Water Supply Paper 519.
- ▨ Farm buildings noted from historical aerial photographs
- Approximate limit of Freon 113 in the soil-gas greater than 0.1 µg/l of air

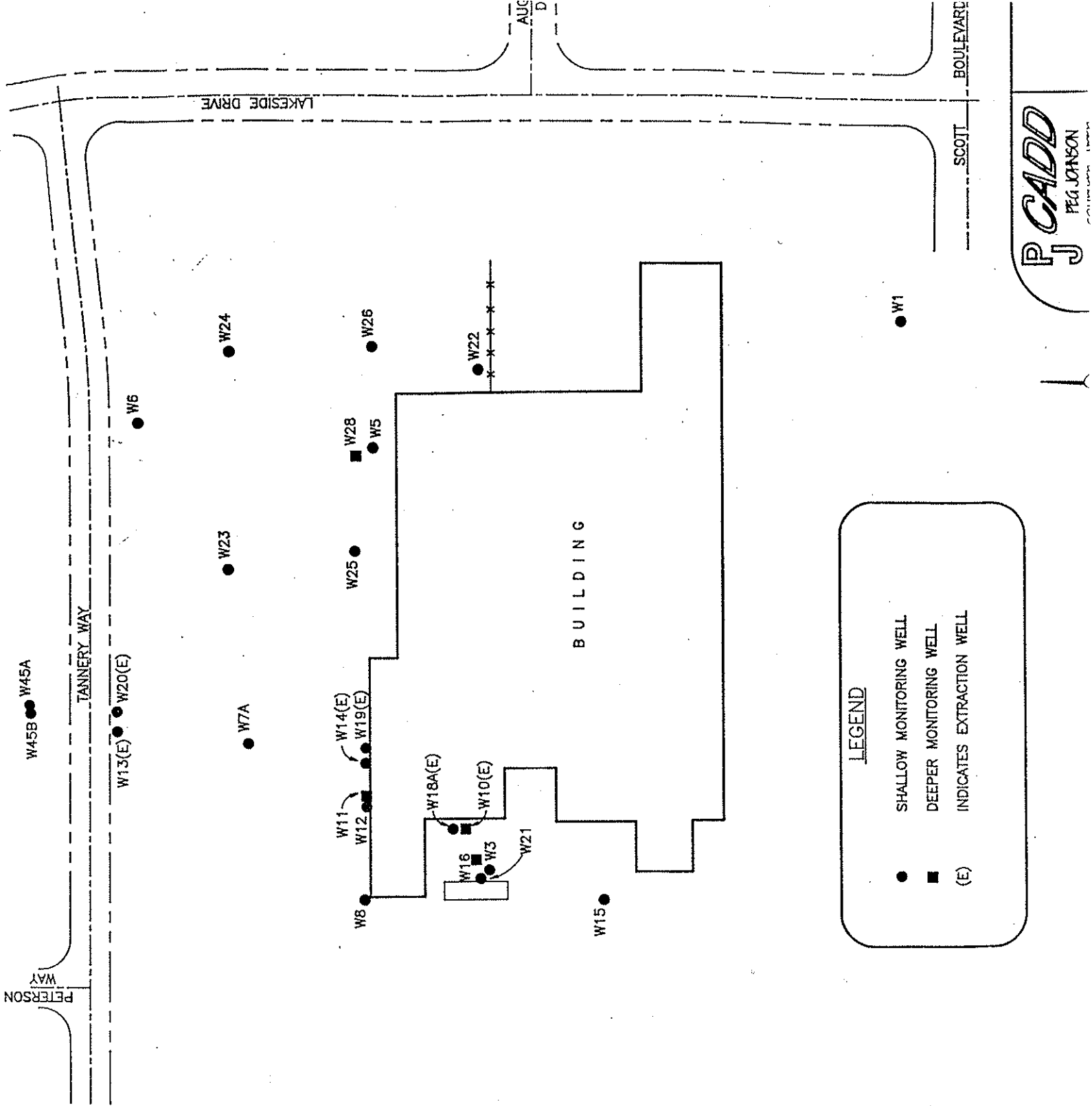
(From: Levine-Fricke, Inc., 1987. Volatile Organic Compounds in Soil-Gas at the Magnetic Peripheral, Inc. Facility, Santa Clara, California, August 20, 1987)

0 500 1000 2000 3000 feet

Figure 3
MAP OF STUDY AREA
AND WELL LOCATIONS

Project No. 1085

LEVINE-FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS



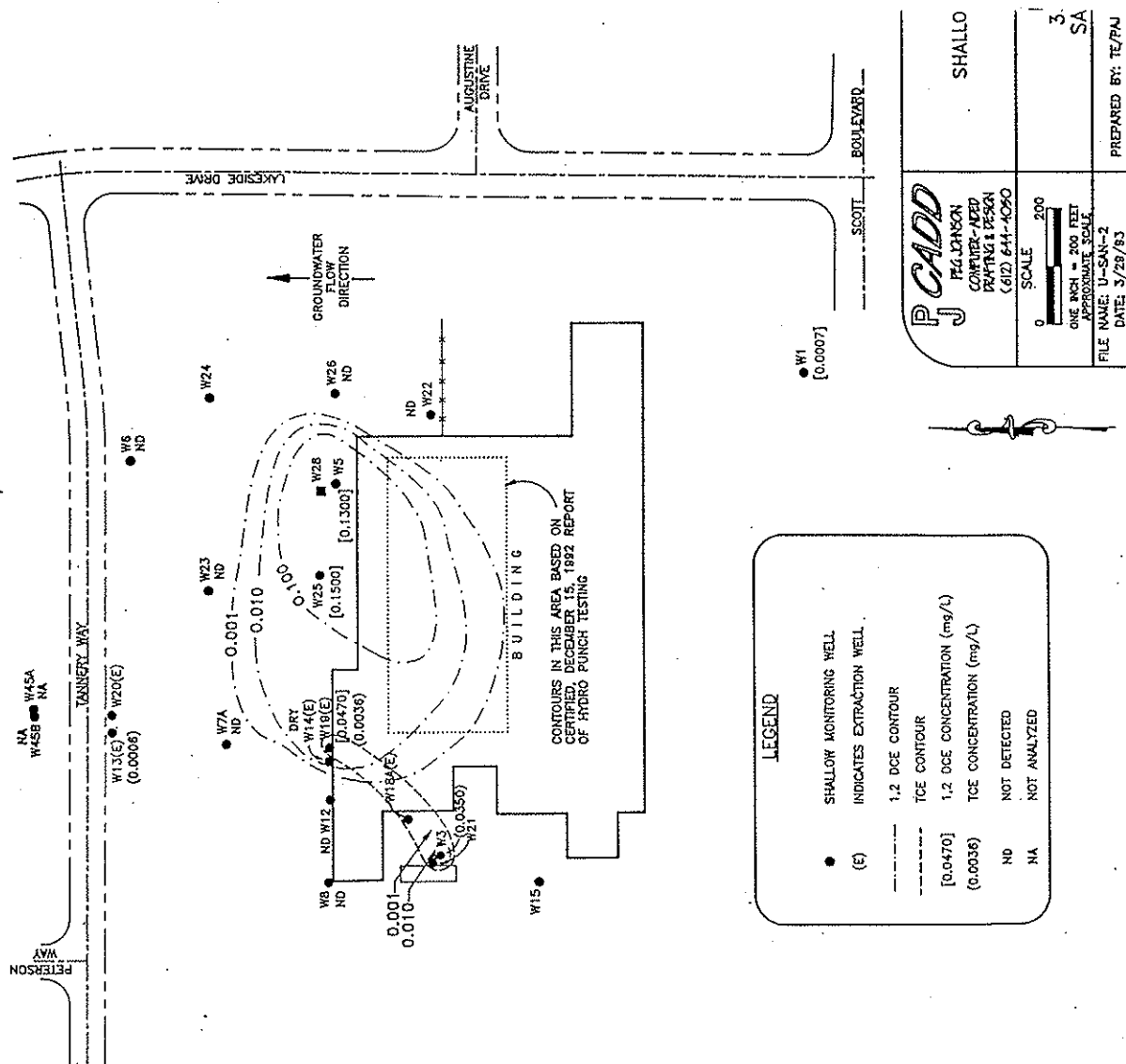
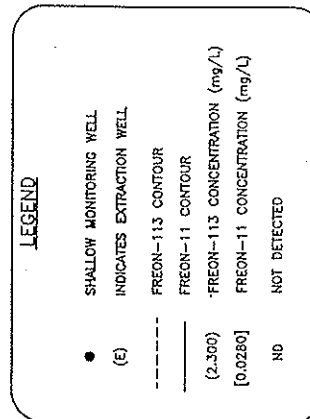
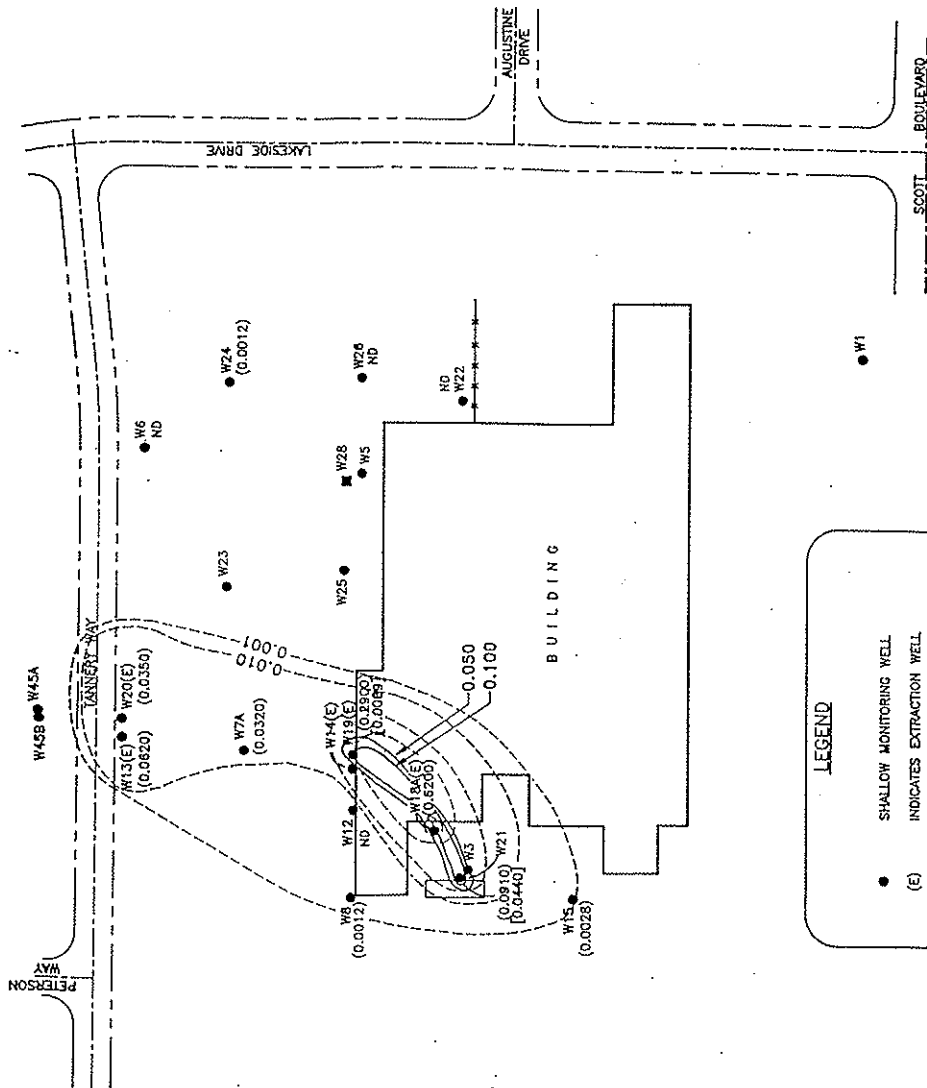


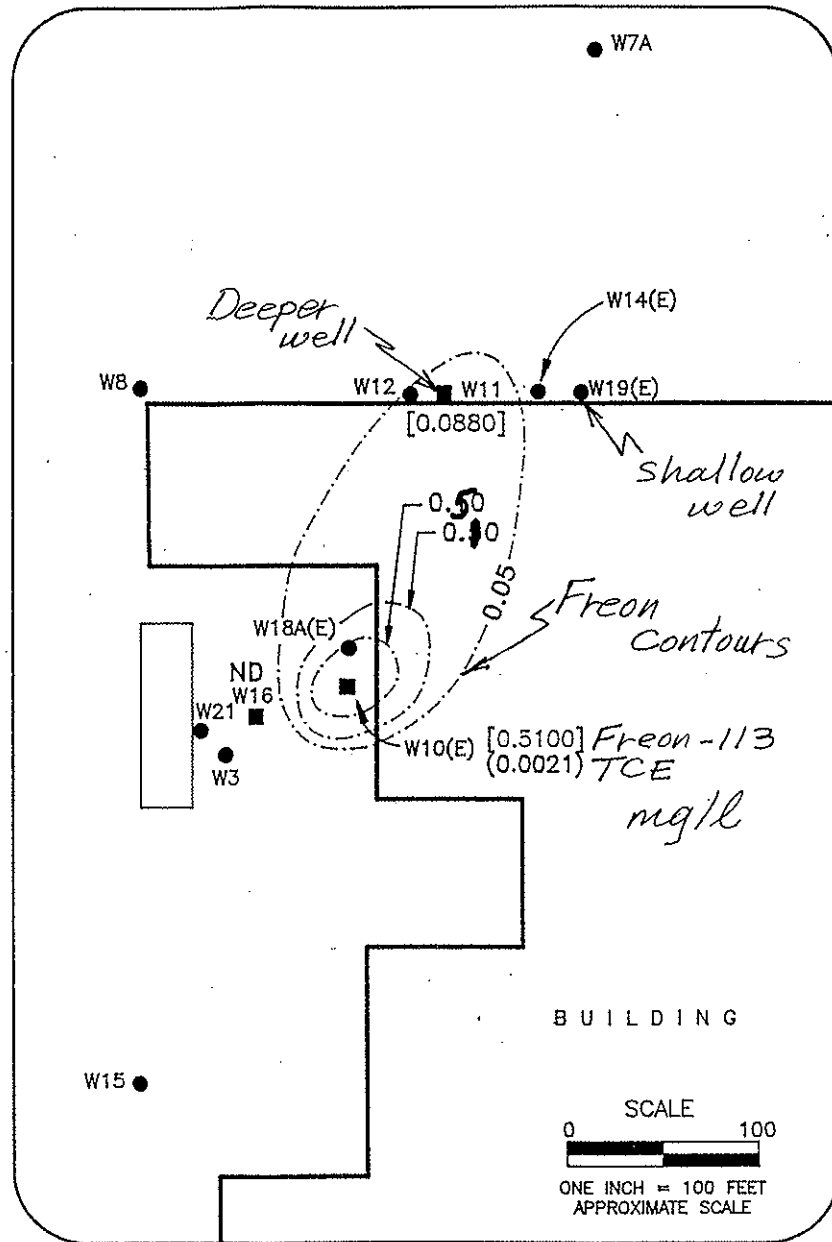
Figure 5
 Shallow Groundwater Concentrations
 1,2-DCE & TCE 1992



P J CADD REG. ENGINEER COMPUTER-AIDED DRAWING DESIGN (802) 644-1050	FIGURE SHALLOW GROUNDWATER (199:	
	SCALE 0 200 ONE INCH = 200 FEET APPROXIMATE SCALE FILE NAME: U-SAN-2 DATE: 3/28/93	FORMER MP 3333 SCOTT SANTA CLARA. PREPARED BY: TE/PAJ REVIEWED BY:

Figure 6
Shallow Groundwater Concentrations
Freon
1992

DETAIL



PJ CADD
PEG JOHNSON
COMPUTER-AIDED
DRAFTING & DESIGN
(612) 644-4050

FIGURE 7
DEEP ZONE GROUNDWATER CONCENTRATIONS
TCE & FREON - 1992

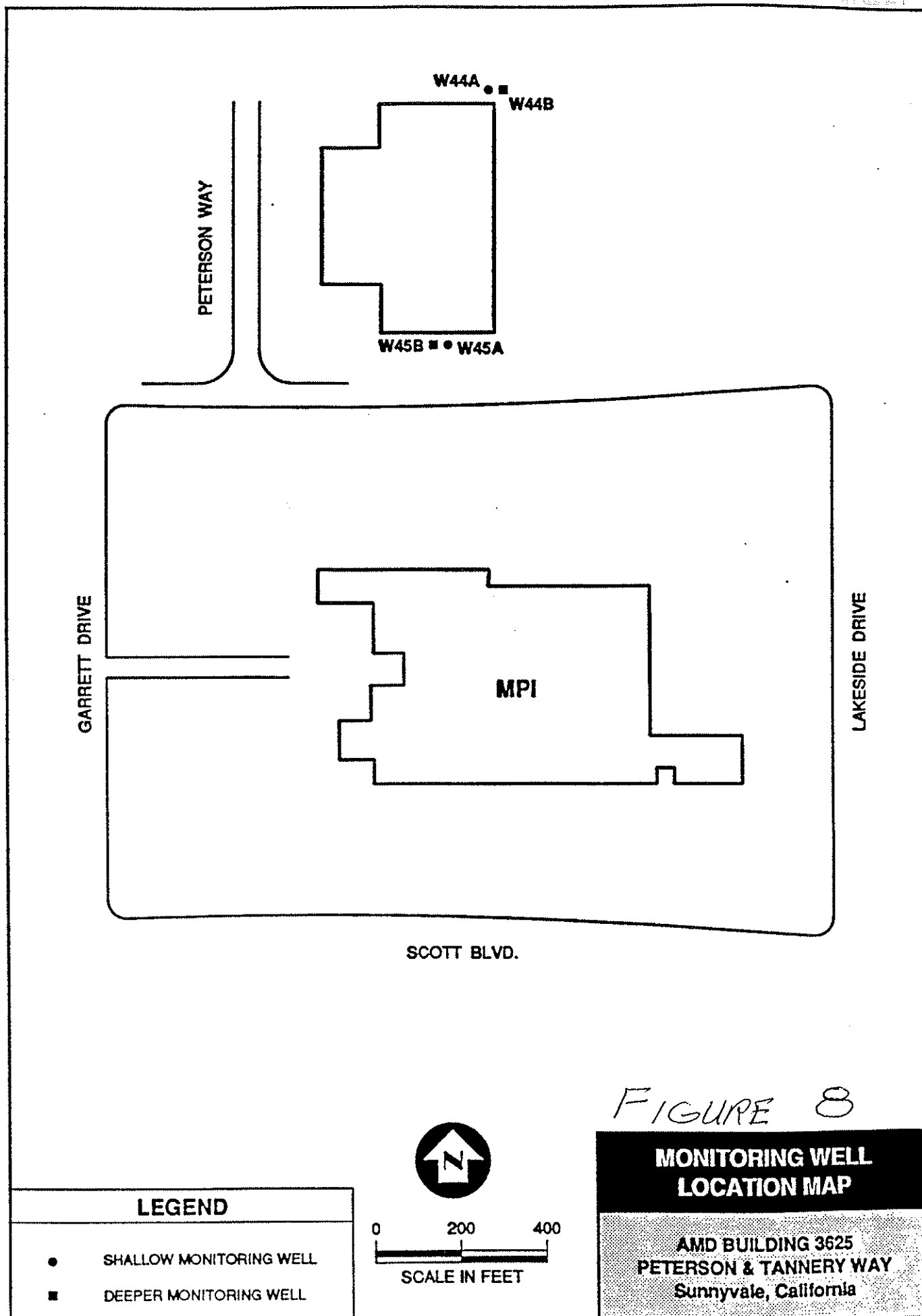
FORMER MPI FACILITY
3333 SCOTT BOULEVARD
SANTA CLARA, CALIFORNIA

FILE NAME: U-SAN-2D
DATE: 3/24/93

PREPARED BY: MW-TE/PAJ

REVIEWED BY: TRE

DATE: 3/30/93



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

UNISYS CORPORATION AND SEAGATE TECHNOLOGY, INC., AND
JENNY BOSTON PROPERTIES

FOR THE PROPERTY LOCATED AT 3333 SCOTT BOULEVARD
SANTA CLARA, SANTA CLARA COUNTY

SITE CLEANUP REQUIREMENTS

ORDER NO. 93-163

CONSISTS OF

PART A

AND

PART B

PART A

A. General

1. Reporting responsibilities of waste Dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16.
2. The principal purposes of a self-monitoring program by a waste Discharger are the following:
 - a. To document compliance with Site Cleanup Requirements and prohibitions established by the Board;
 - b. To facilitate self-policing by the waste Discharger in the prevention and abatement of pollution arising from waste discharge;
 - c. To develop or assist in the development of standards of performance, toxicity standards and other standards; and,
 - d. To prepare water and wastewater quality inventories.

B. Sampling And Analytical Methods

1. Sample collection, storage, and analyses shall be performed according to the most recent version of Standard Methods for the Analysis of Wastewater, and Test Methods for Evaluating Solid Waste EPA Document SW-846, or other EPA approved methods and in accordance with an approved sampling and analysis plan.
2. Water and waste analysis (except total suspended solids) shall be performed by a laboratory approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.
3. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. Definition Of Terms

1. A grab sample is a discrete sample collected at any time.
2. Duly authorized representative is a duly authorized representative may thus be either a named individual or any individual occupying a named position such as the following:

- a. Authorization is made in writing by a principal executive officer; or,
- b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company.

D. Schedule Of Sampling, Analysis, And Observations

1. The Discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B.

E. Records To Be Maintained By The Discharger

1. Written reports shall be maintained by the Discharger for ground water monitoring and wastewater sampling, and shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:
 - a. Identity of sample and sample station number;
 - b. Date and time of sampling;
 - c. Date and time that analyses are started and completed, and name of the personnel performing the analyses;
 - d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A Section B is satisfactory;
 - e. Calculation of results;
 - f. Results of analyses, and detection limits for each analyses; and,
 - g. Chain of custody forms for each sample.

F. Reports To Be Filed With The Board

1. Groundwater monitoring results shall be filed quarterly, unless a different schedule is adopted by the Board and/or Executive Officer. Written self-monitoring reports shall be filed no later than 45 calendar days following the end of the report period. In addition an annual report shall be filed if and as indicated. The reports shall be comprised of the following:
 - a. Letter of Transmittal - A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations, such as, operation and/or facilities modifications. If the Discharger has previously submitted a

detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct. The letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- b. Each monitoring report shall include a compliance evaluation summary sheet. Until the Order's amended to specify ground water protection standards, the following shall apply and the compliance sheet shall contain:
 - i. The method and time of water level measurement, the type of pump used for purging, pump placement in the well, method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water; and,
 - ii. Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations; the chain of custody record.
- c. A summary of the status of any remediation work performed during the reporting period. This shall be a brief and concise summary of the work initiated and completed as follows:
 - i. As interim corrective action measures; and,
 - ii. To define the extent and rate of migrations of waste constituents in the soil and ground water at the site.

- d. The Discharger shall describe, in the quarterly or periodic report, the reasons for significant increases in a pollutant concentration at a well onsite. The description shall include the following:
 - i. The source of the increase;
 - ii. How the Discharger determined or will investigate the source of the increase; and,
 - iii. What source removal measures have been completed or will be proposed.
- e. A map or aerial photograph showing observation and monitoring station locations, and plume contours for each chemical in each aquifer shall be included as part of the quarterly Self-Monitoring Report.
- f. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board. The following information shall be provided:
 - i. The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review; and,
 - ii. In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
- g. By February 15 of each year the Discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:
 - i. Tabular and graphical summaries of the monitoring data obtained during the previous year;
 - ii. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the Site Cleanup Requirements; and,

- iii. A written summary of the ground water analyses indicating any change in the quality of the ground water.

G. In the event the Discharger violates or threatens to violate the conditions of the Site Cleanup Requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

1. Maintenance work, power failures, or breakdown of waste treatment equipment, or;
2. Accidents caused by human error or negligence, or;
3. Other causes, such as acts of nature.

The Discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within 7 working days of the telephone notification. The written report shall include time and date, duration and estimated volume of waste bypassed, method used in estimating volume and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, the waste Discharger shall promptly accelerate his monitoring program to analyze the discharge at least once every day. Such daily analyses shall continue until such time as the effluent limits have been attained, until bypassing stops or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self-Monitoring Report.

Part B

A. Description Of Observation Stations And Schedule Of Observations

1. The observation stations shall consist of 6 existing groundwater monitoring wells, grouped as follows: downgradient property boundary wells W13, W20, W6, and guard wells W7A, W23, W24;

and any other groundwater monitoring wells selected from wells existing or added during the soil and groundwater characterization or the evaluation of remediation work.
2. The schedule of well observations and grab sampling shall be conducted quarterly during the months of January, April, July and October.

B. Observations and Test Procedures

1. The groundwater well observations for all wells shall consist of the following:
 - a. Water elevation reported to the nearest 0.01 foot for both depth to water from the ground surface and the elevation of the groundwater level;
 - b. Groundwater temperature measured at the time of sampling and reported in degrees Fahrenheit;
 - c. Groundwater conductivity measured at the time of sampling as per Standard Methods 205 using potentiometric methodology;
 - d. Groundwater pH measured at the time of sampling as per Standard Methods 423 using potentiometric methodology; and,
 - e. Groundwater turbidity measured at the time of sampling.
2. The test procedures for the groundwater samples taken from all wells shall be as described herein.
 - a. Volatile organic compounds by EPA Method 8010.
 - b. Detection limits shall be adequate for determining compliance with cleanup standards.

- c. Evaluation and response shall be in the manner described in 40 CFR Part 265, Subpart F - Groundwater Monitoring, Section 265.93 and as modified herein:
1. For each of the specified parameters, which are TCE and 1,2-DCE (both isomers) and vinyl chloride, the dischargers must calculate the arithmetic mean and variance, based on at least 4 (four) replicate measurements from each well, and compare results to the criteria in Specification 3 and 4 of Order No. 93-163. At least 4 replicate measurements means the results of the required sample analysis for the current calendar quarter and the results of the required sample analysis from each of the three consecutive preceding calendar quarters. The comparison must consider individually each of the wells in the observation system, and must use the single-tailed Student's t-test at the 0.01 level of significance to determine statistically significant increases over the criteria.
 2. If the comparison for any well shows an increase over the specified criteria for that well, the dischargers must immediately obtain additional groundwater sample(s) from each well where an increase was detected, split the sample(s) in two and obtain analyses of all additional samples to determine if the increase was a result of human error.
 3. If the analyses confirm increase(s), the dischargers must provide verbal notice within 72 hours and written notice within 7 days of the date of such confirmation, to the Regional Board.
 4. Within 15 days after receiving written notification from the Board, the dischargers must implement a contingency plan and within 90 days following notification must begin groundwater extraction; implementation and extraction will continue until confirmed groundwater analyses indicate a return to pre-existing conditions. Groundwater monitoring/sampling and analyses will be accelerated according to a plan proposed to and approved by the Board Executive Officer within 30 days after written notification first received by the dischargers.
 5. If concentrations of one or more VOCs above MCLs migrate offsite, this will be considered a violation and subject to enforcement action.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program is as follows:

1. Developed in accordance with the procedures set forth in this Board's Resolution No. 73-16;
2. Effective on the date shown below; and,
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the Discharger.



Steven R. Ritchie
Executive Officer

12/15/93

Date Ordered